

FEATURES

- 12 Watts Output power
- High Efficiency up to 88%
- 2:1 Wide Input Voltage Range
- Five-Sided Continuous Shield
- DIP and SMT Types Available
- Standard 1.25 x 0.8 x 0.4 Inches
- Fixed Switching Frequency (400KHz)
- Compliant to RoHS EU Directive 2002/95/EC
- UL60950-1, EN60950-1, and IEC60950-1 Licensed
- CE Mark meets 2006/95/EC, 93/68/EEC, and 89/336 EEC

APPLICATIONS

- Measurement
- Wireless Network
- Telecom/Datacom
- Industry Control System
- Semiconductor Equipment



SPECIFICATIONS: LANCW12 Series

All specifications apply @ 25°C ambient unless otherwise noted

INPUT SPECIFICATIONS

Input Voltage Range	12V nominal input	9-18VDC
	24V nominal input	18-36VDC
	48V nominal input	36-75VDC
Input Filter	PI Type	
Input Voltage Variation	dv/dt	5V/ms max
	Complies with ETS300 132 part 4.4)	
Input Surge Voltage (100ms max)	12V input	36VDC
	24V input	50VDC
	48V input	100VDC
Input Reflected Ripple Current (nominal Vin and full load)	20mA _{p-p}	
Start Up Time (nominal Vin and constant resistive load)	450ms typ.	
Start Up Voltage	12V	9VDC
	24V	18VDC
	48V	36VDC
Shutdown Voltage	12V	8VDC
	24V	16VDC
	48V	33VDC
Remote ON/OFF (See Note 6)		
(Positive Logic)	DC-DC ON	Open or 3.0V < Vr < 12V
	DC-DC OFF	Short or 0V < Vr < 1.2V
Input Current of Remote Control Pin (nominal Vin)	-0.5mA ~ 0.5mA	
Remote Off State Input Current (nominal Vin)	2.5mA	

OUTPUT SPECIFICATIONS

Output Voltage	see table	
Voltage Accuracy (nominal Vin and full load)	±1.2%	
Output Current	see table	
Output Power	12 watts max.	
Line Regulation (LL to HL at FL)	Single	±0.2%
	Dual	±0.5%
Load Regulation (no load to full load)	Single Output (DIP)	±0.5%
	Single Output (SMT)	±1%
	Dual Output (SMT, DIP)	±1%
	2.5Vo only	±1%
Cross Regulation (Dual) (Asymmetrical load 25% / 100% FL)	±5%	
Minimum Load	0%	
Ripple/Noise (20 MHz BW)	85mV _{p-p}	
Temperature Coefficient	±0.02% / °C max.	
Transient Response Recovery Time (25% load step)	250us	

PROTECTION SPECIFICATIONS

Over Voltage Protection (single output)	2.5V Output	3.9V
Zener diode clamp	3.3V Output	3.9V
(only for single outputs)	5.1V Output	6.2V
	12V Output	15V
	15V Output	18V
Over Load Protection (% of full load at nominal input)	150% typ.	
Short Circuit Protection	Continuous, automatic recovery	

GENERAL SPECIFICATIONS

Efficiency	see table	
Switching Frequency	400KHz typ.	
Isolation Voltage		
Input to Output	1600VDC min.	
Input (Output) to Case (DIP)	1600VDC min.	
Input (Output) to Case (SMT)	1000VDC min.	
Isolation Resistance	10 ⁹ ohms min.	
Isolation Capacitance	1200pF max.	

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-40°C to +85°C (w/ derating)	
Storage Temperature	-55°C ~ +105°C	
Maximum Case Temperature	100°C	
Relative Humidity (non-condensing)	5% to 95% RH	
Thermal Impedance (Natural Convection)	20°C / Watt	
Thermal Shock	MIL-STD-810F	
Vibration	10~55Hz, 10G, 30 minutes along X, Y, and Z	
MTBF (See Note 1)	2.75 x 10 ⁶ hrs	

PHYSICAL SPECIFICATIONS

Weight	18g (0.62 oz)	
Dimensions	1.25 x 0.80 x 0.40 inches (31.8 x 20.3 x 10.2 mm)	
Case Material	Nickel-coated copper	
Base Material	Non-conductive black plastic	
Potting material	Epoxy (UL94-V0)	
Shielding	five – sided	

Due to advances in technology, specifications subject to change without notice

SAFETY & EMC

Approvals and Standards..... IEC60950-1, UL60950-1, EN60950-1
EMI (See Note 7) EN55022..... Class A
ESD..... EN61000-4-2..... Air $\pm 8KV$ Perf. Criteria B
Contact $\pm 6KV$

Radiated Immunity..... EN61000-4-3.....10V/m Perf. Criteria A
Fast Transient..... EN61000-4-4 $\pm 2KV$ Perf. Criteria B
Surge (See Note 8)..... EN61000-4-5..... $\pm 1KV$ Perf. Criteria B
Conducted Immunity..... EN61000-4-6.....10 Vrms Perf. Criteria A

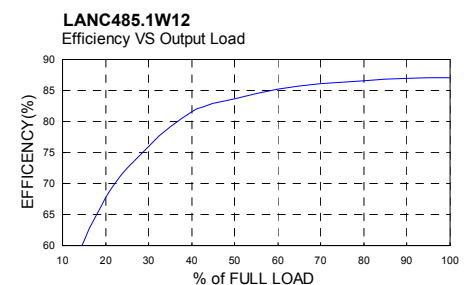
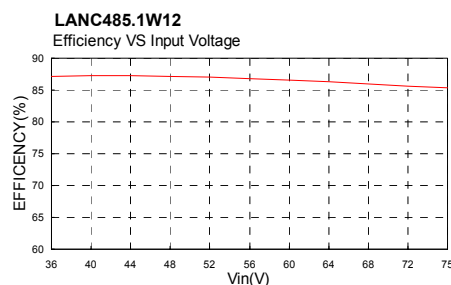
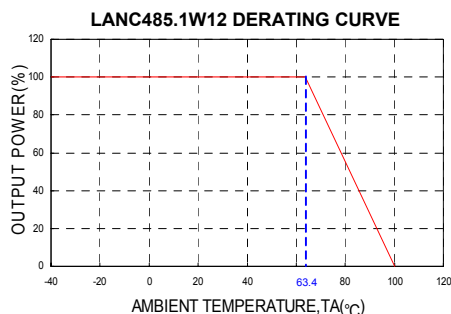
OUTPUT VOLTAGE / CURRENT RATING CHART

Model Number	Input Range	Output Voltage	Output Current		Output (4) Ripple & Noise	Input Current		Efficiency (4)	Capacitor (5) Load max
			Min. load	Full load		No load (3)	Full load (2)		
LANC122.5W12	12 VDC (9 – 18 VDC)	2.5 VDC	0mA	3500mA	85mVp-p	50mA	935mA	82%	2000uF
LANC123.3W12		3.3 VDC	0mA	3500mA	85mVp-p	60mA	1203mA	84%	2000uF
LANC125.1W12		5.1 VDC	0mA	2400mA	85mVp-p	53A	1244mA	86%	2000uF
LANC1212W12		12 VDC	0mA	1000mA	85mVp-p	15mA	1219mA	86%	430uF
LANC1215W12		15 VDC	0mA	800mA	85mVp-p	17mA	1219mA	86%	300uF
LANC1205DW12		± 5 VDC	0mA	$\pm 1200mA$	85mVp-p	24mA	1282mA	82%	$\pm 1250uF$
LANC1212DW12		± 12 VDC	0mA	$\pm 500mA$	85mVp-p	19mA	1205mA	87%	$\pm 200uF$
LANC1215DW12	24 VDC (18 – 36 VDC)	± 15 VDC	0mA	$\pm 400mA$	85mVp-p	24mA	1205mA	87%	$\pm 120uF$
LANC242.5W12		2.5 VDC	0mA	3500mA	85mVp-p	36mA	461mA	83%	2000uF
LANC243.3W12		3.3 VDC	0mA	3500mA	85mVp-p	36mA	594mA	85%	2000uF
LANC245.1W12		5.1 VDC	0mA	2400mA	85mVp-p	35mA	614mA	87%	2000uF
LANC2412W12		12 VDC	0mA	1000mA	85mVp-p	16mA	602mA	87%	430uF
LANC2415W12		15 VDC	0mA	800mA	85mVp-p	17mA	602mA	87%	300uF
LANC2405DW12		± 5 VDC	0mA	$\pm 1200mA$	85mVp-p	15mA	633mA	83%	$\pm 1250uF$
LANC2412DW12	48 VDC (36 – 75 VDC)	± 12 VDC	0mA	$\pm 500mA$	85mVp-p	15mA	595mA	88%	$\pm 200uF$
LANC2415DW12		± 15 VDC	0mA	$\pm 400mA$	85mVp-p	18mA	595mA	88%	$\pm 120uF$
LANC482.5W12		2.5 VDC	0mA	3500mA	85mVp-p	10mA	231mA	83%	2000uF
LANC483.3W12		3.3 VDC	0mA	3500mA	85mVp-p	14mA	297mA	85%	2000uF
LANC485.1W12		5.1 VDC	0mA	2400mA	85mVp-p	23mA	307mA	87%	2000uF
LANC4812W12		12 VDC	0mA	1000mA	85mVp-p	11mA	301mA	87%	430uF
LANC4815W12		15 VDC	0mA	800mA	85mVp-p	5mA	301mA	87%	300uF
LANC4805DW12		± 5 VDC	0mA	$\pm 1200mA$	85mVp-p	6mA	316mA	83%	$\pm 1250uF$
LANC4812DW12		± 12 VDC	0mA	$\pm 500mA$	85mVp-p	6mA	297mA	88%	$\pm 200uF$
LANC4815DW12		± 15 VDC	0mA	$\pm 400mA$	85mVp-p	6mA	297mA	88%	$\pm 120uF$

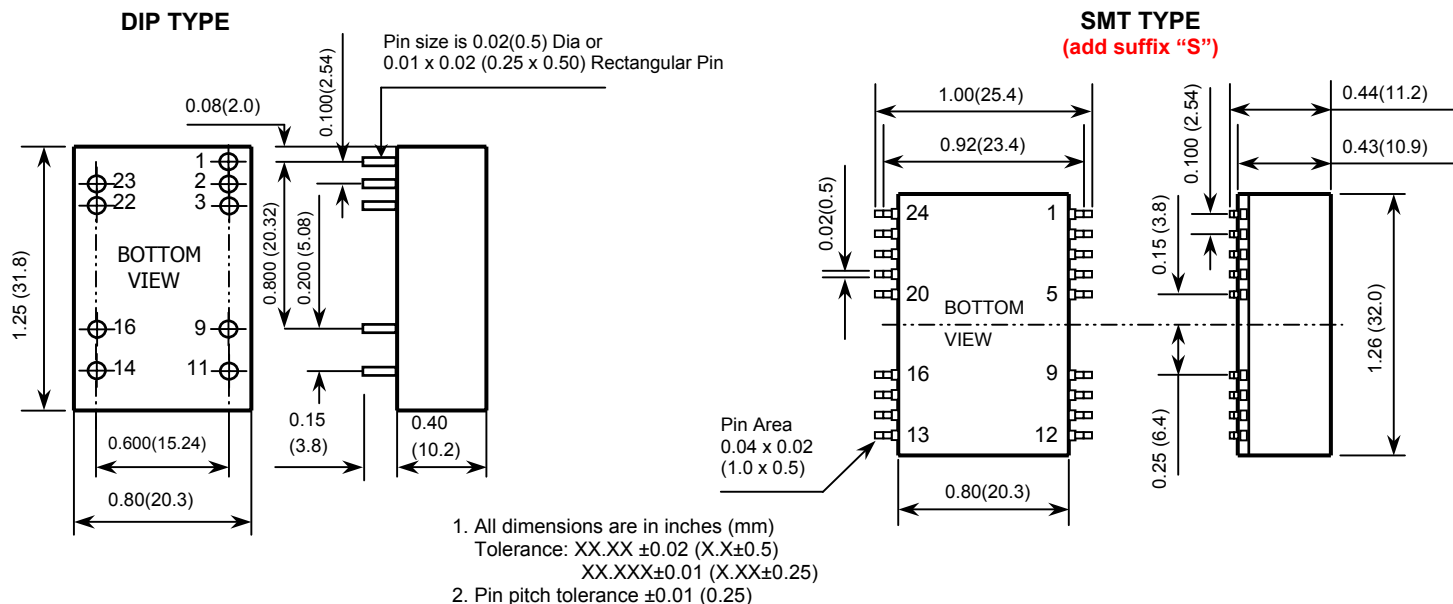
NOTES

1. BELLCORE TR-NWT-000332. Case 1: 50% Stress, Temperature at 40°C.(Ground fixed and controlled environment)
2. Maximum value at nominal input voltage and full load of standard type.
3. Typical value at nominal input voltage and no load.
4. Typical value at nominal input voltage and full load.
5. Test by minimum Vin and constant resistive load.
6. The ON/OFF control pin voltage is referenced to -Vin.
7. The LANCW12 Series can meet EN55022 Class A with parallel an external capacitor to the input pins.
Recommended: 12Vin: 6.8 μF /50V
24Vin: 4.7 μF /50V
48Vin: 2.2 μF /100V
8. An external filter capacitor is required if the module has to meet EB61000-4-5. (The filter capacitor Wall Industries suggests: Nippon chemi-con KY Series, 220 μF /100V, ESR 48m Ω).

DERATING CURVE & EFFICIENCY GRAPHS



MECHANICAL DRAWING

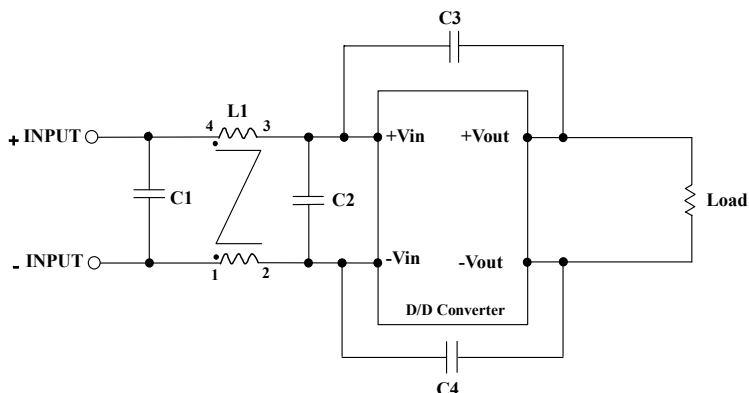


(DIP) PIN CONNECTION					
PIN	SINGLE	DUAL	PIN	SINGLE	DUAL
1	CTRL	CTRL	23	+INPUT	+INPUT
2	-INPUT	-INPUT	22	+INPUT	+INPUT
3	-INPUT	-INPUT			
9	NC	COMMON	16	-OUTPUT	COMMON
11	NC	-OUTPUT	14	+OUTPUT	+OUTPUT

(SMT) PIN CONNECTION					
PIN	SINGLE	DUAL	PIN	SINGLE	DUAL
1	CTRL	CTRL	23	+INPUT	+INPUT
2	-INPUT	-INPUT	22	+INPUT	+INPUT
3	-INPUT	-INPUT			
9	NC	COMMON	16	-OUTPUT	COMMON
11	NC	-OUTPUT	14	+OUTPUT	+OUTPUT
Others	NC	NC	Others	NC	NC

FIGURE 1

Recommended Filter for EN55022 Class B Compliance



The components used in Figure 1, together with the manufacturers' part numbers for these components, are as follows:

	C1	C2	C3	C4	L1
LANC12xxxW12	3.3uF/50V	N/A	1000pF/2KV	1000pF/2KV	325uF Common Choke
LANC24xxxW12	4.7uF/50V	N/A	1000pF/2KV	1000pF/2KV	325uF Common Choke
LANC48xxxW12	2.2uF/100V	2.2uF/100V	1000pF/2KV	1000pF/2KV	325uF Common Choke

FIGURE 2

Recommended EN55022 Class B Filter Circuit Layout

